



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/302,898	04/30/1999	MICHAEL P. CAREN	10990105-5	7610
22878	7590	12/23/2005		
AGILENT TECHNOLOGIES, INC. INTELLECTUAL PROPERTY ADMINISTRATION, LEGAL DEPT. P.O. BOX 7599 M/S DL429 LOVELAND, CO 80537-0599			EXAMINER FORMAN, BETTY J	
			ART UNIT	PAPER NUMBER
			1634	

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/302,898	CAREN ET AL.	
	Examiner	Art Unit	
	BJ Forman	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 20-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 20-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1634

FINAL ACTION

Status of the Claims

This action is in response to papers filed 5 October 2005 in which claims 2, 5, 8, 10-12, 17, 49-52, 55-56 were amended and a Terminal Disclaimer was filed. All of the amendments have been thoroughly reviewed and entered.

The previous rejections in the Office Action dated 6 July 2005 under 35 U.S.C. 112, second paragraph and under 35 U.S.C. 102(a) are withdrawn in view of the amendments. The previous rejections under 35 U.S.C. 103(a) are maintained. The previous rejection under obviousness-type double patenting is withdrawn in view of the Terminal Disclaimer. Applicant's arguments have been thoroughly reviewed and are discussed below. New grounds for rejection necessitated by amendments are provided.

The examiner and art unit for this application have changed. Please address future correspondence to BJ Forman, Art Unit: 1634.

Claims 1-18 and 20-48 are under prosecution.

Claim Rejections - 35 USC § 103

Claims 1-18, 20-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baldeschwieler et al issued 18 January 2000) in view of Weber et al (U.S. Patent No. 4,328,504, issued 4 May 1982).

The rejection is maintained from the previous office action. The text is not reiterated.

Response to Arguments

Applicant asserts that because Weber is not directed to method of fabricating biopolymer arrays, one of ordinary skill in the art would not combine the teachings of Weber and Baldeschwieler. The argument has been considered but is not found persuasive because

Art Unit: 1634

Baldeschwieler specifically teach an Ink Jet Device and computer control of the "ink-jet device"(Example 1). As such, the ink jet art of Weber is analogous to that of Baldeschwieler.

Applicant further asserts that the instant inventors are concerned with problems of correct deposition of biopolymers. Applicant argues that because Weber is concerned with printing ink, which is not a biopolymer, the reference is not properly usable in rejecting the instant claims. The argument has been considered but is not found persuasive because, as stated above, Baldeschwieler is specifically interesting in ink-jet devices. Therefore, art in the ink jet technology is analogous and combinable with Baldeschwieler.

New Grounds for Rejection:

Claim Rejections - 35 USC § 102/103

Claims 1-18, 20-48 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Graves et al (Anal. Chem. 1998, 70: 5085-5082).

Graves et al discloses the preparing of DNA sequences in arrays on glass slides in the title and abstract. On page 5085, second column, first sentence, the depositing of microdroplets in precise locations is described as targeted locations. Table 2 on page 5086 sets forth arraying equipment inclusive of video camera and microscope items. In the bridging sentence between pages 5085 and 5086 the robotic table which accomplishes the arraying is indicated as an X,Y system with additionally Z direction movement. In the first paragraph of the first column on page 5086, deposition is described with a video camera system. Desired spot locations for various substrates are disclosed on page 5088, first column, in the section entitled "Droplet Deposition" via, for example, 1-mm centers or deposition in a 96-well plate or droplets spaced 500 um apart. On page 5090, second column, the section entitled "System Performance" describes Measuring reproducibility of deposition which reasonably discloses

Art Unit: 1634

comparison of targeted deposition with actual deposition as in instant claim 1, pads (c) and (d) and instant claims 8 and 31. This imaging disclosure also reads on instant claim 2 and is illustrated in Figure 7 on page 5091 of the reference. This section also discloses drying of the spots as required in parts (a) and (b) of instant claim 1. Variation in spot deposition is shown on page 5091, Figure 7, via fluorescently tagged oligonucleotide spots and further illustrated as the process via ink spots also in said Figure. Oligonucleotides as disclosed in the reference are reasonably species of polynucleotides as instantly claimed. A specie of a claimed invention as disclosed in a reference is deemed to anticipate the claimed invention. The arraying of different polynucleotides in such arrays is disclosed in the reference on page 5085, first 2 sentences after the abstract as in instant claim 3. Gene oligonucleotides in spots of Figure 7 of 21 bases are disclosed in the first full sentence in the second column on page 5091 of the reference which are DNA as being gene sequences and are hybridizable (and complementary CDNA) and thus single stranded (see title) and thus anticipate the limitations of instant claims 5-7. Light from fluorescently labeled material is scattered in all directions as partially imaged in Figure 7 of the reference which is also indicative of a result of an image utilized in spot comparison as per instant claims 10-12, 29, and 30. The system of the reference fabricates multiple arrays as shown in Figures 2 and 3 on pages 5087 and 5088 with related discussion as per instant claim 13 in that the substrate is complex and made up of a set of slides and 96-well plates. Instant claim 13 does not define any limitation as to complexity or simplicity of the multiple array substrate. Piezo deposition nozzles in the system of the reference are also disclosed on page 5086, first column, first full paragraph, as also required in instant claim 27.

Graves et al further teaches deposition by a processor in communication with the deposition system (Fig. 1) whereby reproducible arrays are manufactured (Fig. 7 and text on page 5091). While they do not specifically teach deposition "in accordance with a target array pattern" the broad phrase "in accordance" encompasses the reproducible arrays of Graves.

Art Unit: 1634

The preceding rejection is based on judicial precedent following *In re Fitzgerald*, 205 USPQ 594 because *Graves et al* is silent with regard to a target array pattern. However, the pattern recited in Claims 1-18 and 20-48 is deemed to be inherent in the reproducible arrays of *Graves et al* because absent a definition of "target array" which distinguishes it over a first array produced by *Graves*, subsequent arrays produced by *Graves* are deemed "in accordance with" the first array.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the method of *Graves et al* to produce arrays in accordance with a defined pattern (e.g. target array pattern). One of ordinary skill in the art would have been motivated to do so based on the desire to reproducibly manufacture arrays as taught by *Graves* (page 5090, last paragraph).

The burden is on applicant to show that the claimed (property X) is either different or non-obvious over that of *Graves et al*.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 1634

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones can be reached on (571) 272-0745. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.



BJ Forman, Ph.D.
Primary Examiner
Art Unit: 1634
December 21, 2005